

$AB = 3.93 \text{ cm}$

Slope $\overline{CD} = 2.50$

Slope $\overline{DB} = 0.50$

Slope $\overline{BC} = -1.50$

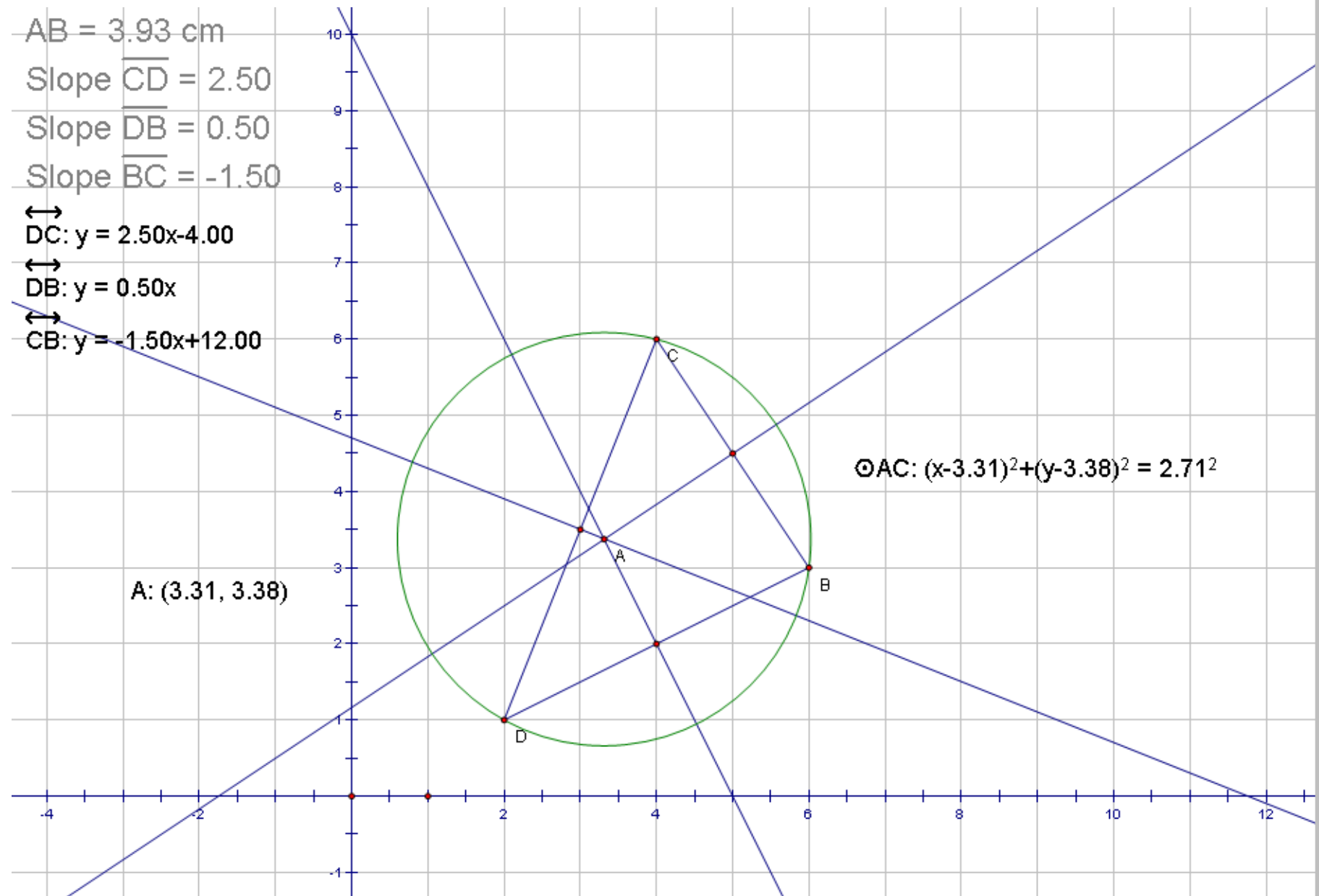
$\overleftrightarrow{DC}: y = 2.50x - 4.00$

$\overleftrightarrow{DB}: y = 0.50x$

$\overleftrightarrow{CB}: y = -1.50x + 12.00$

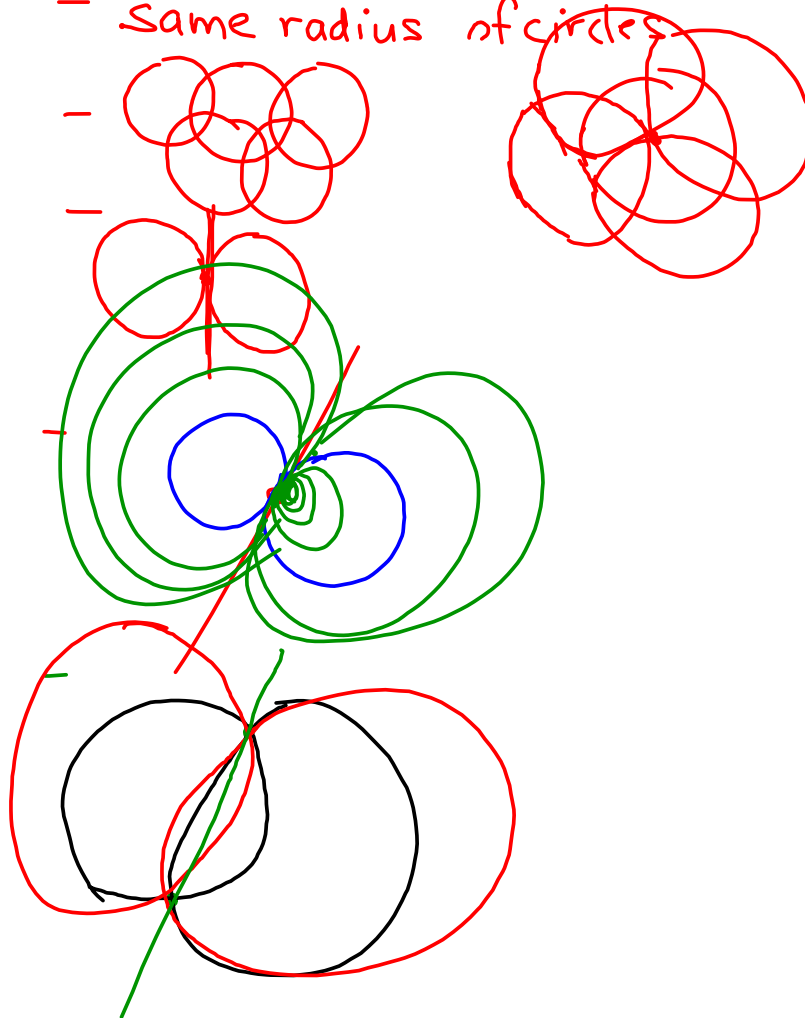
$A: (3.31, 3.38)$

$\odot AC: (x-3.31)^2 + (y-3.38)^2 = 2.71^2$



Family of Circles

- same center but different radii
concentric circles
- same radius of circles



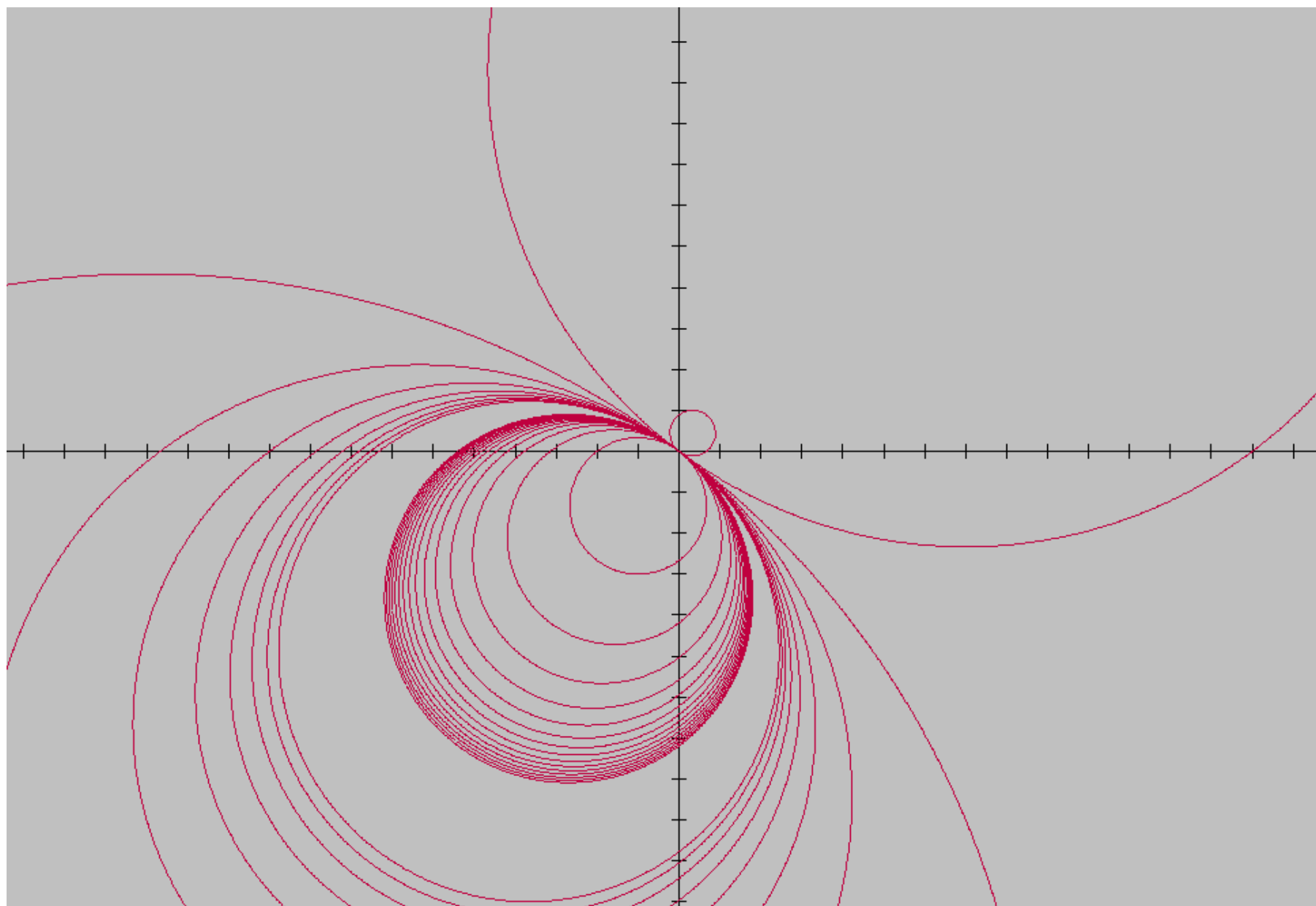
$$(x-h)^2 + (y-k)^2 = r^2$$

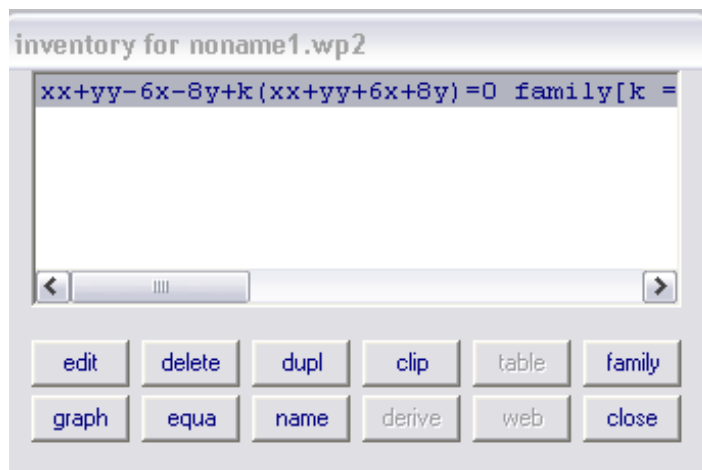
$$(x-2)^2 + (y+1)^2 = 16$$

$$x^2 + y^2 - 4x + 2y = 11$$

$$x^2 + y^2 - 4x + 2y - 11 = 0$$

$$Ax^2 + By^2 + Cx + Dy + E = 0$$



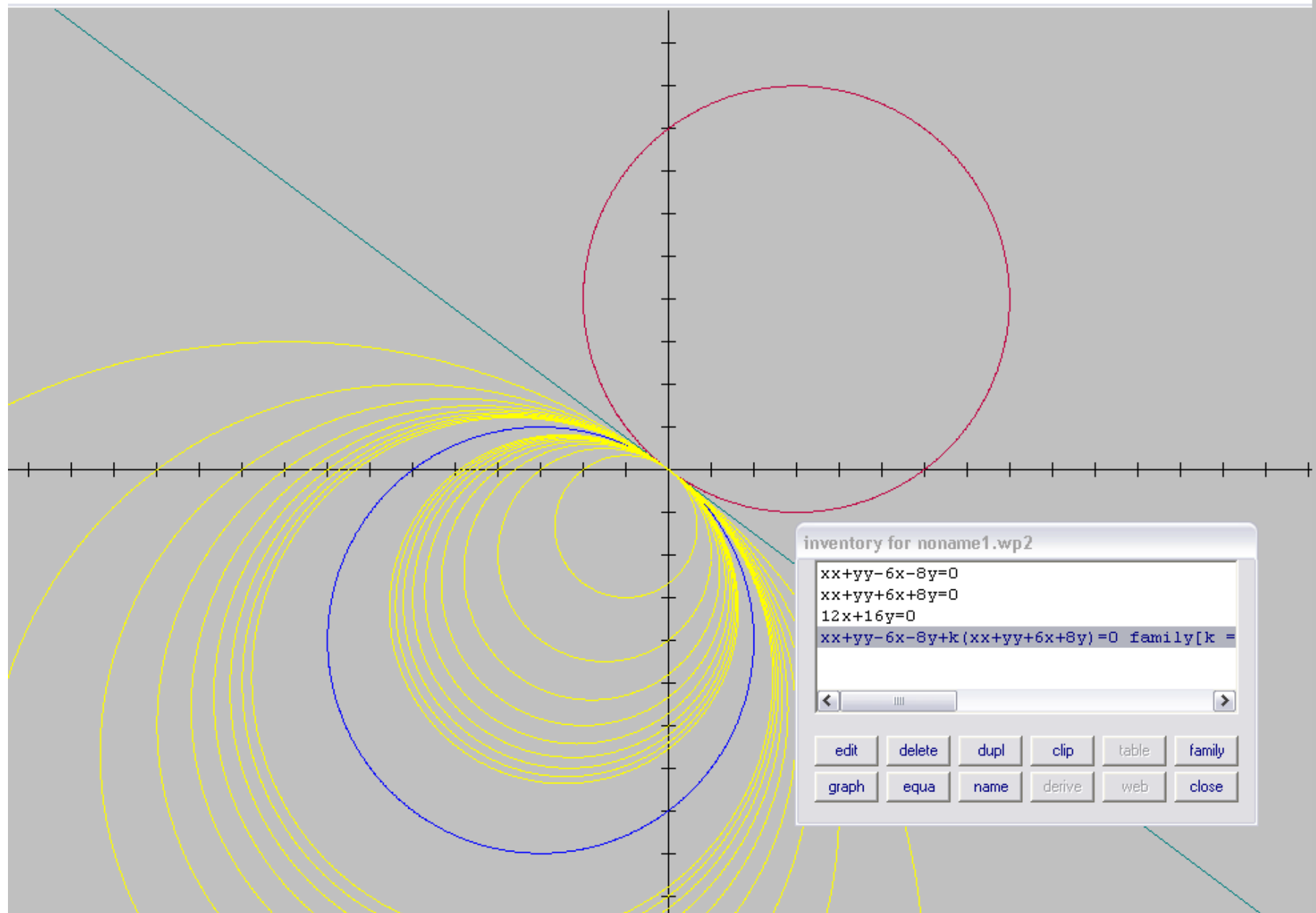


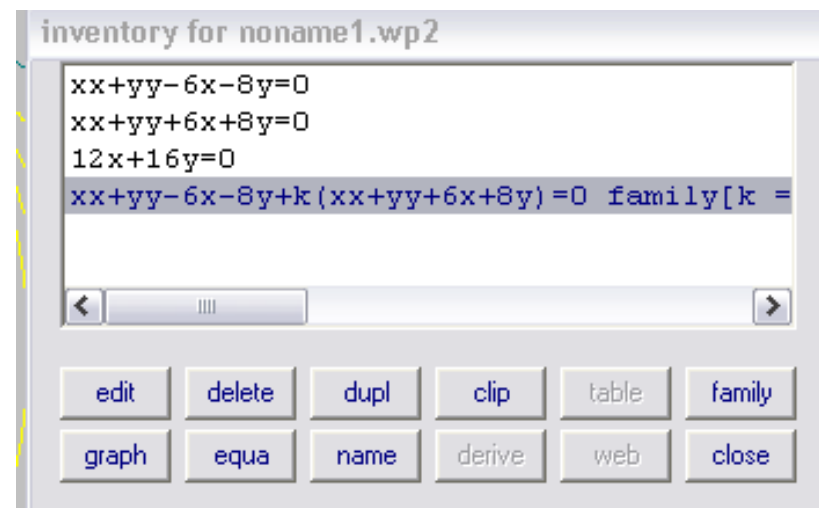
$$x^2 + y^2 - 6x - 8y + \cancel{-1} (x^2 + y^2 + 6x + 8y) = 0$$

$$\cancel{x^2} + \cancel{y^2} - 6x - 8y - \cancel{x^2} - \cancel{y^2} - 6x - 8y = 0$$

$$-12x - 16y = 0$$

$$12x + 16y = 0$$





family [$xx+yy-6x-8y+k(x...$ ✕

parameter (A ... Q)

low

high

steps

☐ watch delay

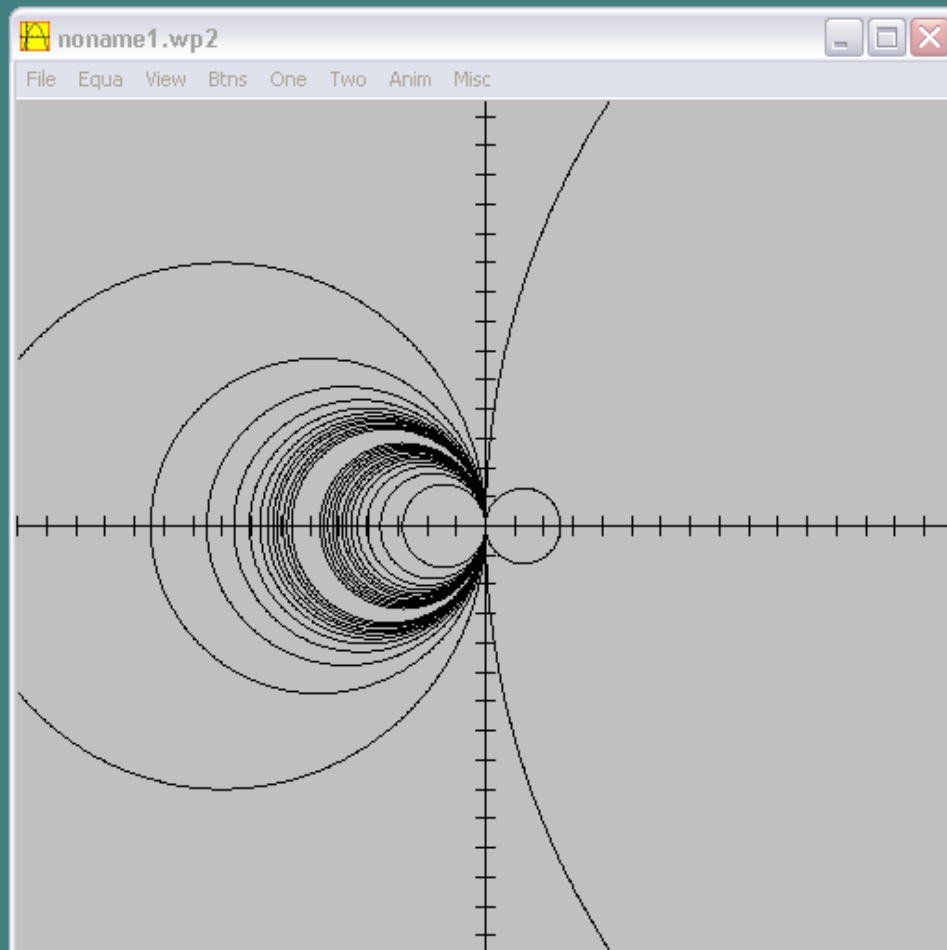
Vertical Tangent Line

$$x^2 + y^2 - 6x + -1(x^2 + y^2 + 6x) = 0$$

$$x^2 + y^2 - 6x - x^2 - y^2 - 6x = 0$$

$$-12x = 0$$

$$x = 0 \quad (y\text{-axis})$$



inventory for noname1.wp2

```
xx+yy-6x+k(xx+yy+6x)=0 family[k = -20.0
```

edit delete dupl clip table family

graph equa name derive web close

$$x^2 + y^2 - 8y + \overset{-6x}{-1}(x^2 + y^2 + 6x - 8y) = 0$$

$$x^2 + y^2 - 8y - 6x - x^2 - y^2 - 6x + 8y = 0$$

$$-12x = 0$$

$$x = 0$$

$$x^2 + y^2 + 6x + 6y + \overset{+6}{-1}(x^2 + y^2 + 6x + 6y) = 2$$

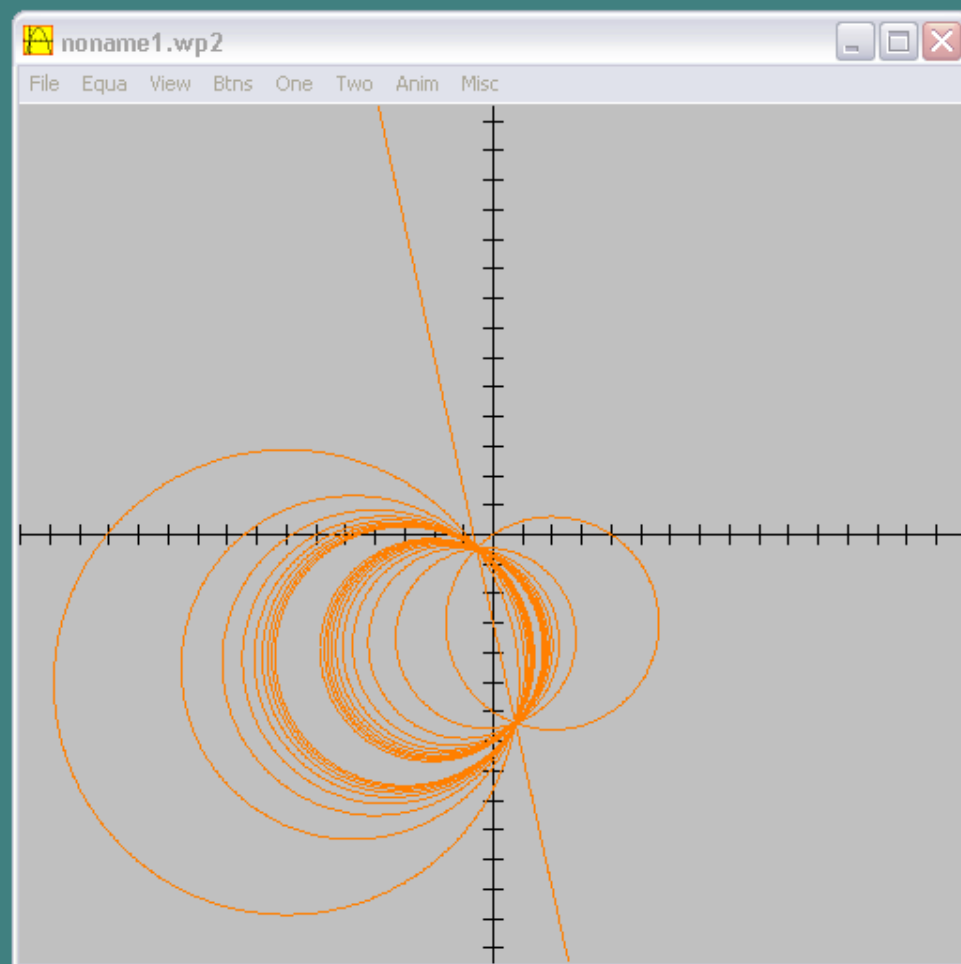
$$\cancel{x^2} + \cancel{y^2} - 6x + 6y - \cancel{x^2} - \cancel{y^2} + 6x - 6y = 24$$

$$-12x = 24$$

$$x = -\frac{1}{6}$$

Horizontal Tangent

$$x^2 + y^2$$



inventory for noname1.wp2

```
xx+yy-4x+6y+k(xx+yy+5x+8y+6)=0 family[k]
```

edit delete dupl clip table family
graph equa name derive web close